



FEDERAL HIGHWAY ADMINISTRATION  
ARIZONA DIVISION

## DEVELOPMENT GUIDELINES

NUMBER: DG-25

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SUBJECT: INTERSTATE CHANGE OF ACCESS REPORTS

### GENERAL

The Interstate Highway System has been constructed to very high standards (and necessarily at very high cost) to assure high levels of safety, capacity and operating efficiency. "Full Control of Access" is one of those very high standards which are considered essential to preserve and protect the arterial nature of the Interstate Highway System and its high levels of safety, capacity and operation efficiency. With "Full Control of Access", access to and from an Interstate Highway has been limited to interchanges generally spaced at long intervals – 5 to 10 miles in rural areas and 1 to 3 miles in urban areas. Exceptions to "Full Control of Access" are extremely rare and must be supported by very extenuating circumstances and compelling justification.

At the same time, much of the Interstate Highway System has been constructed with at least some capacity and flexibility to accommodate possible future expansion. New land development and changing travel patterns and traffic volumes often make it desirable to modify existing interchanges and add additional interchanges. However, great care must be exercised to avoid situations where modifications to existing interchanges or added new interchanges cause the capacity, operating efficiency and safety of the Interstate Highway System to be diminished. Accordingly, all proposals to modify existing interchanges or to add additional interchanges must be thoroughly evaluated to (1) assure that the modifications or additions do not unacceptably compromise existing capacity, operating efficiency and traffic safety, and (2) identify any design features, traffic controls measures or other improvements which may be necessary in order to enhance or preserve existing capacity, operating efficiency and traffic safety.

These guidelines provide guidance on the issues which should be addressed in the evaluation of proposed modifications to existing interchanges or added new interchanges on the Interstate Highway System. This evaluation is documented in a "Change of Access Report", which is submitted to the Federal Highway Administration (FHWA) in support of a request for formal approval of a "Change in Access".

### DEFINITIONS

Change in Access – Generally, changes in access control involve new openings in the existing

access control line or the closing of existing openings in the access control line. However, there are numerous situations which do not fit neatly into this generalization. The following two lists provide guidance for determining which actions on the Interstate System are considered to be Changes in Access Control and which actions are not considered to be Changes in Access Control.

List 1 – Actions Considered to be Changes in Access Control

- a. Modifications which add new interchanges where none now exist
- b. Modifications which add new ramps where none now exist
- c. Modifications which eliminate existing ramps or entire interchanges (*If these modifications involve a System Interchange, they are considered to be "major" modifications to a System Interchange*)
- d. Modifications which convert existing Service Interchanges to System Interchanges (*These modifications are considered to be "major" modifications to a System Interchange*)
- e. Modifications which revise the basic configuration of an existing System Interchange, such as the conversion of a cloverleaf interchange to a directional interchange, or conversion of a loop ramp to a directional ramp (or visa versa) (*IF these modifications involve a system interchange, they are considered to be "major" modifications to a System Interchange*)
- f. Modifications which revise the basic configuration of existing Service Interchanges, such as the conversion of a cloverleaf interchange to a directional interchange, conversion of a loop ramp to a directional ramp (or visa versa) or the conversion of an existing diamond ramp to a loop ramp, a semi-direct ramp or a directional ramp.
- g. Modifications which relocate existing ramps so that they serve different crossroads or streets.
- h. Modifications which involve new accesses along frontage roads where they also serve as ramps.

List 2 – Actions NOT Considered to be Changes in Access Control

- i. Modifications which increase (or decrease) the number of lanes entering or leaving an Interstate freeway at an existing ramp
- j. Modifications which relocate an existing ramp if it serves the same crossroad or street.
- k. Modifications involving the widening of entrance ramps upstream of the gore point where they merge with or enter the mainline Interstate freeway

- l. Modifications involving the widening of exit ramps downstream of the gore point where they diverge from the mainline Interstate freeway
- m. Modifications which add new auxiliary lanes or modify existing auxiliary lanes along the Interstate System
- n. Modifications involving only the intersections of the ramps with the crossroads or streets.
- o. Modifications involving the installation of ramp metering, including provisions for HOV or transit bypass lanes
- p. Modifications involving improvements (widening, channelization, bridge replacement, etc) to the crossroads over or under the Interstate freeway at existing interchanges.
- q. Modifications involving new or revised (widened, replaced, etc.) crossings over or under Interstate freeways where there are no ramps (just grade separations).
- r. Modifications involving frontage roads which do not also serve as ramps.

Access Points – Each entrance and exit within an interchange is considered to be a separate and distinct access point. For example, a typical diamond interchange has four (4) access points.

Changed Configuration – If the configuration of an interchange is changed, the change in configuration is considered to be a Change in Access, even if the number of access points remain the same. For example, if one of the four ramps in a diamond interchange is changed to a loop ramp, that action constitutes a Change in Access. Similarly, if an existing cloverleaf interchange is changed to a fully directional interchange, that action would constitute a Change in Access.

Locked Gates – Locked gates are access points, with use limited to specific individuals or organizations. They should be locked at all times when they are not actively in use. Any change in the status of a locked gate constitutes a Change in Access, including its creation, its removal, or its conversion to a conventional interchange or ramp. In general, FHWA discourages the creation of any new locked gates and supports the removal of existing locked gates whenever possible.

Major Modifications – Modifications which (1) eliminate existing ramps or entire interchanges, (2) convert existing Service Interchanges to System Interchanges, or (3) revise the basic configuration of an existing interchange, such as the conversion of a cloverleaf interchange to a directional interchange, conversion of a loop ramp to a directional ramp (or visa versa), or conversion of an existing diamond ramp to a loop ramp, semi-direct ramp or a directional ramp.

Service Interchange – An interchange on the Interstate System which provides access to a street or highway without full control of access.

System Interchange – An interchange on the Interstate System which provides access to another Interstate Highway or to a non-Interstate freeway (thus, also having full control of access).

### EVALUATION PROCESS

Any request for a “Change in Access” (ie, a new interchange or any addition to or modification of an existing interchange) must address the following points:

1. **Freeway Corridor Review** – A Level of Service (LOS) analysis should be made for the segment of the Interstate freeway surrounding a proposed Change in Access. This LOS analysis should identify the current and design year traffic (service volumes) along the Interstate freeway main lanes and all ramps, design and running speeds, and the LOS for all merging, diverging and weaving operations. When a proposed Change in Access would cause a reduction in the LOS of the Interstate freeway operations, alternative access points, additional through lanes, improved local circulation systems, and modal options should be considered and addressed – and where determined to be feasible – developed and implemented. All feasible design features and traffic control measures (auxiliary lanes, ramp meters, high occupant vehicle (HOV) lanes, etc.) should be considered, and where prudent, incorporated into the project implementing the proposed Change in Access in order to reduce the impact of the proposed Change in Access on existing and future Interstate freeway operations.

In urban and suburban areas subject to rapid development and where a series of potential new interchanges are possible or planned for the future, this LOS analysis should be expanded to cover a logical longer segment of the Interstate freeway encompassing all of the potential new interchanges. In addition, more evaluation may be necessary where a proposed Change in Access would be located in close proximity (within two miles) of a planned system interchange with a future freeway facility.

2. **Impacts on Adjacent Interchanges** – An evaluation of the impacts the proposed Change in Access would have on adjacent interchanges must be made. Adequate spacing between interchanges is essential for the interchanges and the Interstate freeway to operate efficiently and safely.

It is FHWA’s policy to locate interchanges on Interstate freeways in urban areas at least two miles apart. Where this is not possible, a minimum one-mile spacing (two miles in suburban areas) should be used. When the interchange spacing is below the minimum distance, other alternatives such as frontage roads, collector distributor roadways, ramp braiding, etc., must be considered.

Where the distance from a proposed Change in Access to an adjacent interchange exceeds three miles, this evaluation may be reduced to a simple statement of those distances, unless unusual circumstances dictate a more thorough evaluation.

3. **Local Street or Road Network** – The primary purpose of an Interstate freeway is to accommodate the longer interstate, inter-regional and intra-regional trips. Short trips should be made on the local street or road network. Comprehensive planning and subsequent commitment to any needed improvements to the local street or road system should be accomplished prior to a request for a Change in Access.

In addition, local streets and roads must have adequate capacity and comprise a sufficient system to accommodate the anticipated exit ramp volumes without backing standing traffic out onto the Interstate freeway (or requiring excessive slowing by diverging traffic prior to reaching the ramp gore point).

4. **Interchange Design** – The design of all interchanges on the Interstate System are to conform to minimum AASHTO geometric design standards and accommodate all movements. Areas of concern are as follows:

- Approval of partial interchanges not providing for all movements will be extremely rare, and then only when supported by very extenuating circumstances and compelling justification.
- A random ramp without a return movement (to continue a trip in the same direction) should not be used.
- Slip ramps to two-way frontage roads are troublesome in operation, difficult to sign (assign right of way), and potentially very dangerous. Where absolutely necessary, such ramps should be used only with extra and effective countermeasures to offset these potential problems.
- One-way slip ramps need special care in design to mitigate speed differential, weaving, and right of way assignment problems.
- No access to adjacent property should be permitted along frontage roads which also serve as a ramp – between the gore point where an exit slip ramp merges with a frontage road and the crossroad intersection, and between the crossroad intersection and the gore point where an entrance slip ramp diverges from the frontage road.
- Freeway to freeway connectors at system interchanges should be free from slip ramps to frontage roads or other local roads.
- Generally, Interstate interchange ramps should connect to major and minor arterial streets and highways rather than to minor collector or local streets and roads.
- Generally, interchange configurations should be compatible with adjacent interchanges to assure uniformity of exits, entrances and route continuity. Special

attention should be given to interchanges where State Highways or US Routes which overlap on portions of the Interstate System enter or leave the Interstate System.

5. **Highway Safety** – Safety and accident data must be considered and analyzed. A proposed Change in Access should desirably enhance highway safety and at minimum have no impact on highway safety. Adverse impacts on highway safety must be mitigated.
6. **Environmental Requirements** – Changes in Access on the Interstate System require approval by FHWA, and therefore constitute a “Federal action”. A “Federal action” requires as a prerequisite, compliance with the National Environmental Protection Act (NEPA). Accordingly, FHWA cannot formally approve a Change of Access Request until the appropriate level of NEPA compliance document has been approved (Change of Access approval and NEPA approval can be accomplished simultaneously).

The above stated position constitutes a recent change from previous FHWA practices wherein FHWA formally approved Change of Access requests subject to subsequent NEPA compliance. Past Change of Access approvals made under this earlier practice will remain valid without further action – except that NEPA compliance must be accomplished prior to implementation of the approved Change in Access.

7. **Planning Requirements** – Proposed Changes in Access should be consistent with local, regional and statewide transportation and land use plans and planning efforts. Before formal approval can be granted, a proposed Change in Access must be consistent with the current Transportation Improvement Plan (TIP) for the metropolitan area (if applicable), the transportation conformity requirements of 40 CFR Parts 51 and 93 (if applicable) and the Statewide Transportation Improvement Plan (STIP).

**NOTE:** As indicated, FHWA cannot grant formal approval of requests for Changes of Access without compliance with environmental and planning requirements as stated above. However, where a request of a Change of Access is made well in advance of the time when it is reasonable to complete the NEPA compliance process or include the Change in Access in the TIP, STIP or Conformity documents, FHWA will review the engineering aspects of the proposed Change of Access and provide an “Determination of Engineering and Operational Acceptability”. This “Determination of Engineering and Operational Acceptability” does not constitute formal approval and should not be construed as such. This determination may also be useful to determine if a proposal Change of Access is a viable alternative in the NEPA compliance process.

## CHANGE OF ACCESS REPORT

In general, a Change of Access Report prepared in support of a request for approval of a proposed Change of Access should include the information listed below. However, the actual information needed will vary depending upon the nature of the Change of Access being proposed. For example, Change of Access proposals located in isolated areas may not require the same level

of detail as those in urban areas or in close proximity to other interchanges, particularly system interchanges. In addition, this guidance is not intended to be rigidly prescriptive regarding format. The appropriate and necessary information must be included to support the request but the format is a matter of the preparers' discretion.

1. Purpose
2. Relationship to other highway plans and programs
3. Distances to and size of communities or activities directly served
4. Description of the existing access and the proposed access
  - a. Configuration of the existing and proposed interchange
  - b. Distances to and projected impacts to adjacent interchanges
  - c. Alternatives that have been considered
  - d. Description of any substandard features
  - e. Freeway main line and crossroad traffic volumes (ADT and DHV) including turning movements and percent heavy trucks, for the current year, the implementation year and the design year. *The design year may vary from 5 years for interim interchange modifications to 10 to 20 years for permanent interchange modifications (depending on scope and cost) to 20 years for new interchanges.*
  - f. Number of lanes on the Interstate freeway main line, crossroads, ramps, and frontage roads (where applicable), including auxiliary lanes, collector-distributor roadways, and turn lanes.
5. Description of any proposed or planned local street network improvements.
6. Traffic operational analyses for the existing and proposed conditions, including crossroads and other roads and streets to the extent necessary to assure their ability to effectively collect and distribute traffic to and from the new or modified access points. This should include a level of service analysis and weaving analyses, and may include a more extensive of analyses of these considerations over an logical longer segment of the Interstate freeway.
7. Accident data analysis for safety enhancements (or opportunities) and for mitigation of adverse safety impacts.
8. Any other information which might help explain and/or support a proposed Change of Access – such as cost-benefit analyses, cost-effectiveness analyses, source of funding, implementation schedules, local desires and concerns, etc.

Good quality maps, diagrams, plans and tables often help to convey the important information

more effectively and also cut down on the bulk of Change of Access Reports. These in turn expedite the review and approval process.

#### APPROVAL AUTHORITY WITHIN FHWA

In recent years, approval authority for most Changes in Access on the Interstate Highway System have been delegated to the FHWA Division Office. Consequently, only four specific types of Change of Access actions are now specifically reserved for the approval of the Federal Highway Administrator and thus require submittal to our Washington Office. These are:

1. New System Interchanges (freeway to freeway)
2. "Major" modifications to existing System Interchanges
3. New Service Interchanges (freeway to crossroad or street) located within the urbanized portion of a Transportation Management Area
4. New Partial Interchanges (interchanges which do not provide for all movements)

All other Changes in Access on the Interstate System will now be approved by the FHWA Division Office. These include:

- "Minor" modifications to System Interchanges
  - New Service Interchanges outside of urbanized portion of Transportation Management Areas
  - All modifications to existing Service Interchanges
  - Addition of missing movements at existing partial interchanges
  - New or modified locked gate access points
  - All modifications which close, eliminate or abandon existing ramps, interchanges or locked gates
  - Temporary breaks in access control for construction, maintenance, utility installations, etc.
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